

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

Claims 1 - 2 (Canceled):

Claim 3 (Currently Amended): Method for the production of a hybrid organic solar cell having the general structure

Substrate + EM/HTM/dye/SOL/EM, or

Substrate + EM/SOL/dye/HTM/EM, or

Substrate + EM/HTM/SOL/EM, in which

EM is ~~the~~ an electrode material, selected from the group ~~comprising~~ consisting of a transparent conductive oxide (TCO) and metal, with at least one of the EM ~~layer(s)~~ layers of the cell being a TCO,

HTM is ~~the~~ a hole transport material,

SOL is a semiconducting oxide layer,

"dye" means a suited dye,

comprising vapor-deposition of the SOL ~~layer~~ of the hybrid organic solar cell.

Claim 4 (Original): Method for the production of a hybrid organic solar cell according to claim 3, comprising vapor-deposition of at least one second layer of the hybrid organic solar cell in addition to the SOL layer.

Claims 5 - 24 (Canceled)

Claim 25 (Currently Amended) Method according to claim 3, comprising additional deposition and/or vapour deposition or vapor-deposition of an additional a layer of lithium fluoride close to ~~the~~ EM interfaces either on one side or both sides.

Claim 26 (Currently Amended) Method according to claim 3, comprising increasing the surfaces of the interfaces of the layers by use of structured indium tin oxide ITO, co-evaporation of HTM and dye ~~and/or~~ or dye/TiO<sub>2</sub> or co-evaporation of HTM and a dopant.

Claim 27 (Currently Amended) Method according to claim 3, ~~characterised in that~~ wherein the substrate is selected from the group ~~comprising~~ consisting of glass, coated glass, polymeric foils, ~~like foils made from PET, PEN or PI,~~ norbornene-based foils, SnO<sub>2</sub>-coated metal foils ~~or~~ and stainless steel foils, wherein said polymeric foils made from PET, PEN or PI.

Claim 28 (Currently Amended) Method according to claim 3, ~~characterised in that~~ wherein the substrate is flexible.

Claim 29 (Currently Amended) Method according to claim 3, ~~characterised in that~~ wherein EM is selected from the group ~~comprising~~ consisting of indium tin oxide, fluorine doped tin oxide, zinc oxide ~~or~~ and metal-doped zinc oxide, wherein said and metal is selected from the group consisting of, ~~like~~ Au, Al, Ca ~~or~~ and Mg or combinations of metals like Al/Li, Mg/Ag ~~and the like.~~

Claim 30 (Currently Amended) Method according to claim 3, ~~characterised in that~~  
wherein EM is indium tin oxide.

Claim 31 (Currently Amended) Method according to claim 3, ~~characterised in that~~  
wherein HTM is selected from the group ~~comprising~~ consisting of phthalocyanine and derivatives thereof (with or without a central atom or group of atoms), metal-free and metal containing porphyrins and derivatives thereof, TPD derivatives, triphenylamine and its derivatives, (including different ground structure as TDATAs, TTABs, TDABs, and cyclic variations like N-carbazoles and its derivatives), thiophenes, polythiophenes and derivatives thereof, polyanilines and derivatives thereof and hexa-benzocoronene and its derivatives, triphenyldiamine derivatives, aromatic diamine compounds having connected tertiary aromatic amine units of 1,-bis(4-(di-p-tolylamino)phenyl)- cyclohexane, aromatic diamines containing two or more tertiary amines and having two or more fused aromatic rings substituted on the nitrogen atoms as typified by 4,4 bis[(N-1-naphthyl) N-phenylamino]-biphenyl, aromatic trimers having a starburst structure derived from triphenylbenzene, aromatic diamines such as N,N'-diphenyl-N,N'-bis(3-methyphenyl)-(1,1'-biphenyl)-4,4'diamine,  $\alpha,\alpha,\alpha',\alpha'$ -tetramethyl- $\alpha,\alpha'$ -bis(4-di-p-tolylaminophenyl)-p-xylene, triphenylamine derivatives whose molecule is sterically asymmetric as a whole, compounds having a plurality of aromatic diamino groups substituted on a pyrenyl group, aromatic diamines having tertiary amine units connected through an ethylene group, aromatic diamines having a styryl structure, starburst type aromatic triamines, benzyl-phenyl compounds, compounds having tertiary amine units connected through a fluorene group, triamine compounds, bisdipyridylaminobiophenyl compounds, N,N,N-triphenylamine derivatives, aromatic diamines having a phenoxazine structure, diaminophenylanthridine, and other

carbazole derivatives, hydrazoen compounds, silazane compounds, silanamine derivatives, phosphamine derivatives, quinacridone compounds, stilbene compounds ~~such as 4-di-p-tolylamino stilbene and 4-(di-p-tolylamino)-4'-(4-di-p-tolylamino)-styryl]stilbene~~, triazole derivatives, oxadiazole derivatives, imidazole derivatives, polyarylalkane derivatives, pyrazoline derivatives, pyrazolone derivatives, oxadiazole derivatives, imidazole derivatives, polyarylalkane derivatives, pyrazoline derivatives, amino-substituted chalcone derivatives, oxazole derivatives, styrylanthracene derivatives, fluorenone derivatives and polysilane derivatives, all compounds alone or in admixture of two or more, polymers, ~~like polyvinyl carbazole and polysilanes~~, polyphosphazenes, polyamides, polyvinyl triphenylamine, polymers having a triphenylamine skeleton, polymers having triphenylamine units connected through a methylene group and polymethacrylates containing aromatic amine, ~~preferably having an average molecular weight of at least 1,000, more preferably at least 5,000.~~

Claim 32 (Currently Amended) Method according to claim 3, ~~characterised in that~~ wherein HTM is copper-phthalocyanine (CuPc).

Claim 33 (Currently Amended) Method according to claim 3, ~~characterised in that~~ wherein SOL is selected from the group ~~comprising~~ consisting of semiconducting oxides, like TiO<sub>2</sub>, SnO<sub>2</sub>, ZnO, Sb<sub>2</sub>O<sub>3</sub>, and PbO.

Claim 34 (Currently Amended) Method according to claim 3, ~~characterised in that~~ wherein SOL is TiO<sub>2</sub>.

Claim 35 (Currently Amended) Method according to claim 3, ~~characterised in that~~  
wherein the dye is selected from the group ~~comprising~~ consisting of di- or monosubstituted  
perylene with all possible substituents, ~~e.g. perylene anhydrid, perylene dianhydrides,~~  
~~perylene imides, perylene diimides, perylene imidazoles, perylene diimidazoles and~~  
~~derivatives thereof,~~ terrylene, quinacridone, anthraquinone, nealred, titanylphthalocyanine,  
porphines and porphyrines and derivatives thereof, polyfluorenes and derivatives thereof and  
azo-dyes.

Claim 36 (Currently Amended) Method according to claim 3, ~~characterised in that~~  
the wherein a dye layer is deposited in a thickness of about 5 to about 65 nm and the SOL  
layer is deposited in a thickness of about 5 to about 50 nm.

Claim 37 (Currently Amended) Method according to claim 3, ~~characterised in that~~  
wherein more than one dye is used in one cell.

Claim 38 (Currently Amended) Method according to claim 3, ~~characterised in that~~  
wherein the substance of the HTM is doped.

Claims 39 – 41 (Canceled)

Claim 42 (New) Method according to claim 31, wherein said HTM is an aromatic  
diamine containing two or more tertiary amines and having two or more fused aromatic rings  
substituted on the nitrogen atoms and is 4,4-bis[(N-1-naphthyl)-N-phenylamino]-biphenyl.

Claim 43 (New) Method according to claim 31, wherein said HTM is an aromatic diamine and is N,N'-diphenyl-N,N'-bis(3-methylphenyl)-(1,1'- biphenyl)-4,4'diamine,  $\alpha,\alpha,\alpha',\alpha'$ -tetramethyl- $\alpha,\alpha'$ -bis(4-di-p-tolylaminophenyl)-p-xylene.

Claim 44 (New) Method according to claim 31, wherein said HTM is a stilbene compounds and is 4-di-p-tolylamino-stilbene and 4-(di-p- tolylamino)-4'-[4-di-p-tolylamino)-styryl]stilbene.

Claim 45 (New) Method according to claim 31, wherein said HTM is a polymer selected from the group consisting of polyvinyl carbazole and polysilanes.

Claim 46 (New) Method according to claim 31, wherein when said HTM is a polymer said polymer has an average molecular weight of at least 1,000 Da.

Claim 47 (New) Method according to claim 31, wherein when said HTM is a polymer said polymer has an average molecular weight of at least 5,000 Da.

Claim 48 (New) Method according to claim 35, wherein when said dye is a di- or monosubstituted perylenes with all possible substituents and said dye is selected from the group consisting of perylene anhydrid, perylene dianhydrides, perylene imides, perylene diimides, perylene imidazoles, perylene diimidazoles and derivatives thereof.

SUPPORT FOR THE AMENDMENTS

Claims 1, 2, 5-24, and 39-41 have been canceled.

Claims 3 and 25-38 have been amended.

Claims 42-48 have been added.

The amendment of Claims 3 and 25-38 is supported by the corresponding claims as originally and previously pending. New Claims 42-47 are supported by previously presented Claim 31 and original Claim 12. The molecular weight in Claims 46 and 47 finds implicit support in the original specification and claims and would be the immediately recognized unit for polymer molecular weight to one of ordinary skill. New Claim 48 finds support in previously presented Claim 35 and original Claim 16.

No new matter has been added by the present amendment.